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REMARKS

The Examiner's Office Action of March 2, 2004 has been received and its contents reviewed. Applicants would like to thank the Examiner for the consideration given to the above-identified application.

By the above actions, original claims 1-14 have been reinstated as new claims 24-37 in that they were inadvertently cancelled in the response filed October 10, 2003, and claims 15-23 remain pending in the instant application. Accordingly, claims 15-37 are pending for consideration, of which claims 15, 20, 24 and 32 are independent. In view of these actions and the following remarks, reconsideration of this application is now requested. Further, while it is noted that the present Official Action has been made final, it is respectfully requested that the foregoing amendments and the following remarks be entered and fully considered by the Examiner. Consideration of the foregoing amendments does not require a further search on the part of the Examiner in that all issues presently presented were previously before the Examiner and no new matter has been added. While new claims 24-37 have been added, these claims are simply previous claims 1-14 reinstated for consideration by the Examiner. At a minimum, it is respectfully requested that the foregoing amendments be entered for purposes of appeal.

Initially, with reference to page 2 of the Official Action, entitled *Priority*, it is noted that the Examiner acknowledges Applicant's claim for priority; however, it is stated that Applicant has not yet submitted a Certified copy of the priority document. To the contrary, a Certified copy of the priority document was submitted on May 28, 2002 as evidenced by the attached copy of the Transmittal and stamped receipt card. Accordingly, it is respectfully submitted that the Applicant has complied with 35 U.S.C. 119(b) with the May 28, 2002

filing. A copy of the cover page of the priority document is also attached hereto. Accordingly, it is respectfully requested that this objection be withdrawn by the Examiner and Applicant's compliance with 35 U.S.C. 119(b) be noted.

Referring now to the detailed Office Action, claims 15, 16, 18-21 and 23 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 65,914,7321 issued to Yano et al. This rejection is respectfully traversed in that the patent to Yano et al. neither discloses nor remotely suggests that which is presently set forth by applicant's claimed invention.

As the Examiner can readily appreciate, each of independent claims 15 and 20 recite the use of a random value sequence for generating a driving timing sequence. Specifically, Independent claim 15 recites a timing device for generating N sets of driving timing sequence in response to a reference timing sequence and a random value series with the random value series including N random values, each N sets of driving timing sequence being obtained by shifting the reference timing sequence with a corresponding one of the N random values, where N is a positive integer, and a driving device for forming said images in response to the N sets of driving timing sequence, wherein each set of driving timing sequence sequentially drives the M printing elements. Similarly, independent claim 20 recites a print method for forming images on a printing medium including generating a reference timing sequence, generating N sets of driving timing sequence by shifting the reference timing sequence with a random value series including N random values where N is a positive integer, and driving the printing element set in response to the N sets of driving timing sequence to form the images on a printing medium. The random numbers in Yano et al. are irrelevant to driving timing.

As noted above, the random value series of the claimed invention is for generating a driving timing sequence. However, the random numbers of Yano et al. are for randomly modulating the dot size (col. 17, lines 60-61, Yano et al.) and are irrelevant to driving timing. The teachings of Yano et al. are totally different and remote from that which is presently set forth by Applicant's claimed invention and consequently the patent to Yano et al. fails to anticipate that of the claimed invention.

Additionally, the unit for generating random value series is not disclosed by Yano et al. The element 1703 of Yano et al. is nothing more than a DRAM for storing random numbers (col. 17, lines 60-62, Yano et al.). Further, the random numbers are calculated in advance and are not generated by the element 1703 in Yano et al. (col. 17, lines 60-62, Yano et al.). Therefore, the unit for generating random value series as set forth in accordance with Applicant's claimed invention is neither disclosed in nor suggested by the teachings of Yano et al.

Accordingly, Applicant respectfully submits that Yano et al. do not anticipate the claimed invention, since the teachings of Yano et al. are totally different from that of the claimed invention, and Yano et al. does not disclose the unit for generating random value series of the claimed invention. Therefore, it is further respectfully submitted that claims 15-16, 18-21, and 23 are not anticipated by the prior art and are allowable over the prior art of record.

With reference to page 3 of the Official Action, claims 17 and 22 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. in view of U.S. Patent No. 6,142,598 issued to Iwasaki et al. This rejection is likewise respectfully traversed in that the

patent to Iwasaki et al. does nothing to overcome the aforementioned shortcomings associated with the teachings of Yano et al.

As mentioned above, the random numbers of Yano et al. are for randomly modulating the dot size (col. 17, lines 60-61, Yano et al.) and are irrelevant to driving timing. The teachings of Yano et al. are significantly different from that of the claimed invention. Further, as noted hereinabove, Yano et al. does not disclose the unit for generating random value series of the claimed invention (col. 17, lines 60-62, Yano et al.). Accordingly, because the patent to Iwasaki et al. fails to overcome these shortcomings and claims 17 and 22 each depend from independent claims 15 and 22 respectively and include all of the limitations thereof, claims 17 and 22 likewise satisfy the requirement for patentability and are allowable over the prior art of record..

With respect to claims 24-37 which are previous claims 1-14 which have been reinstated, it is likewise respectfully submitted that these claims include limitations not found in the prior art of record and are in proper condition for allowance.

In the Official Action dated May 8, 2003, claims 1-14 were rejected as being unpatentable over Iwasaki et al. in view of JP 07-125311 to Naoji et al. In so far as this rejection applies to new claims 24-37, this rejection is respectfully traversed in the combination proposed by the Examiner neither discloses nor remotely suggests that which is presently set forth by Applicant's invention.

The presently claimed invention utilizes a timing device for generating N sets of driving timing sequence. As disclosed in Applicant's specification with reference to Fig. 10a or Fig. 11a, for example, N is 21. Each set of the driving timing sequence is used to sequentially drive M printing elements. As disclosed in Fig. 5, for example, in the

specification, M is 8. In the present invention, a reference timing sequence and a random value series are inputted to the timing device. The random value series has N random values, wherein each random value is used to shift the reference timing sequence. Therefore, each scan of M printing elements is driven by one corresponding set of driving timing sequence, which is randomly different from other sets of driving timing sequence for driving other scans of M printing elements.

With respect to Iwasaki et al., this reference merely teaches a shift amount setting unit 103, which performs calculation as defined by equation (5) in col. 5, line 26, in which the drive timing is shifted every four dots. Hence, Iwasaki et al. clearly does not teach, disclose, or suggest a timing device for generating a driving timing sequence by shifting a reference timing sequence with a random value, and a driving device for driving the printing element to form an image by printing dots on the printing medium, wherein, with the shifting of the reference timing sequence, a cyclic unevenness of the image is scattered as recited in independent claim 24 nor does Iwasaki et al. teach, disclose, or suggest a method including generating a reference timing sequence, generating a driving timing sequence by shifting the reference timing sequence with a random value and driving the printing element with the driving timing sequence to form the image on the printing medium as recited in independent claim 32.

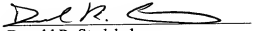
With respect to the teachings of Naoji et al., this reference discloses a multi-pass recording method which prints by writing multiple times to a printing field, where a non-printed pixel and a printing pixel and each kind of ink using a different random mask pattern, as surmised from the machine-translation of the Naoji et al. reference. Applicants further note that Naoji et al. discloses printing by using a different random mask for each printing

area and each sort of ink, in a multi-pass recording system; however, Naoji et al. does not teach, disclose, or suggest a timing device, in response to a reference timing sequence and a random value series, for generating a driving timing sequence. Particularly, Naoji et al taken alone or in combination with the teachings of Iwasaki et al. fails to disclose a timing device for generating a driving timing sequence by shifting a reference timing sequence with a random value, and a driving device for driving the printing element to form an image by printing dots on the printing medium, wherein, with the shifting of the reference timing sequence, a cyclic unevenness of the image is scattered as recited in independent claim 24 nor does the combination teach, disclose, or suggest a method including generating a reference timing sequence, generating a driving timing sequence by shifting the reference timing sequence with a random value and driving the printing element with the driving timing sequence to form the image on the printing medium as recited in independent claim 32. Accordingly, it is respectfully submitted that independent claims 24 and 32, as well as those claims which depend therefrom, distinguish over the prior art of record and are in proper condition for allowance.

Therefore, in view of the foregoing, it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 15-37 be allowed and that the application be passed to issue.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with Applicants' representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby by expedited.

Respectfully submitted,



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This will acknowledge receipt of the following:

1. Information Disclosure Statement with Certificate of Mailing
2. Form PTO-1449
3. Two (2) Cited References
4. Transmittal of Priority Document and Claim of Foreign Filing Date

in re PATENT application of:

Ben-Chaun DU et al.
Serial No. 10/082,207
Filed: 02/26/2002
Title: PRINTING APPARATUS AND METHOD FOR IMPROVING QUALITY OF PRINTING
Due date: 05/26/2002

742433-26
DRS/jas

May 28, 2002

Docket No.: 742433-26

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Ben-Chaun DU et al.)
Serial No. 10,082,207) Art Unit: 2853
Filed: February 26, 2002)
For: PRINTING APPARATUS AND METHOD FOR IMPROVING QUALITY OF PRINTING IMAGE)

TRANSMITTAL OF PRIORITY DOCUMENT AND CLAIM OF FOREIGN FILING DATE PURSUANT TO 35 U.S.C. 119

Commissioner for Patents and Trademarks
Washington, D.C. 20231

Sir:

It is respectfully requested that this application be given the benefit of the foreign filing date under the provisions of 35 U.S.C. 119 of the following, a certified copy of which is submitted herewith:

Application No.	Country	Filed
090104548	China	February 27, 2001

Respectfully submitted,

Donald R. Studebaker
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TRANSLATION OF CERTIFIED DOCUMENT

THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE RECORDS OF THIS OFFICE OF THE APPLICATION AS ORIGINALLY FILED WHICH IS IDENTIFIED HEREUNDER.

APPLICATION DATE: 2001/02/27

APPLICATION NUMBER: 090104548

(TITLE: Printing Apparatus and Method for Improving Quality of Printing Image)

APPLICANT: Benq Corporation

DIRECTOR OF GENERAL

陳明邦

ISSUE DATE: 2001/03/20

SERIAL NUMBER: 09011004229

中華民國經濟部智慧財產局

INTELLECTUAL PROPERTY OFFICE
MINISTRY OF ECONOMIC AFFAIRS
REPUBLIC OF CHINA

茲證明所附文件，係本局存檔中原申請案的副本，正確無訛，
其申請資料如下 ：
This is to certify that annexed is a true copy from the records of this office of the application as originally filed which is identified hereu

申　請　日 ： 西元 2001 年 02 月 27 日
Application Date

申 請 案 號 ： 090104548
Application No.

申　請　人 ： 明基電通股份有限公司
Applicant(s)

局　　長
Director General

陳明邦

發文日期： 西元 2001 年 3 月 20 日
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